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ABSTRACT

Research has supported the idea that the use of computers in the education of young children promotes social interaction and academic achievement. This resource booklet provides an introduction to computers in early childhood settings to enrich learning opportunities and provides guidance to teachers to find developmentally appropriate software and hardware. The first section of the booklet focuses on learning with computers and the roles of computers in early childhood programs. The second section provides information on getting started and creating a computer-active classroom. Specific guidelines on computer configurations and setting up the classroom are included. The third section provides guidance in choosing and using software and in evaluating educational software. This section advocates the use of software that builds concepts and skills, and provides classification of software as follows: (1) thinking and problem solving; (2) "Logo"; (3) educational adventure games; (4) communication; (5) painting and drawing; (6) writing and reading; (7) electronic and interactive story books; and (8) keyboard skills. Specific brand name software packages are listed in many of these classification areas. The fourth section of the booklet provides a definition of the Internet and information on its use. The final section provides resource information on educational software distributors, professional journals, monographs, and journals. (SD)

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Learning with computers

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The series aims to provide practical, easy to read, up-to-date information and support to a growing national readership of early childhood workers. The books bring together the best information available on wide ranging topics and are an ideal resource for children's services workers and others interested in the care and education of young children. Books produced in previous years have now become standard texts in many early childhood courses.

The Resource Book Committee invites contributions on all aspects of the education and care of young children. Given the multi-disciplinary nature of the field, contributions from all disciplines concerned with young children and their families are welcome.

All Resource Book manuscripts are required to undergo a blind review by readers experienced in the field and will not necessarily be published. The style of the Resource Books must be simple and informative. Jargon and the presumption of prior knowledge should be avoided. Guidelines for contributors are available on request from the Publications Section.

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Learning with computers

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About the author

Alison Elliott has worked in early childhood education for over 20 years, as an early childhood teacher, teacher educator, researcher, and writer.

She has been involved with computers and young children since the early 1980s and has helped many early childhood services get started with computers.

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Photographs

Barry Brown (cover, page 2)

Courtesy Alison Elliott (pages 1, 3 & 4)

Glossary

What does it mean?

Sometimes computer terms can be confusing. Here are a few terms and their meanings.

Browser

The software needed for using the World Wide Web.

CD–ROM

Compact Disk—Read Only Memory. A optical disk with huge storage capacity.

CPU

Central Processing Unit. The 'brain' of the computer.

Documentation

Manuals, booklets and instructions that explain how to use hardware and software.

Download

Moving a file from a host computer to your computer.

Floppy disk

A small device with limited capacity for storing information.

Hard disk

A large capacity, high speed storage device built into the computer.

Hardware

The physical parts of a computer system. The keyboard, monitor, mouse, printer.

Host

A computer that controls a telecommunications network.

HTTP

HyperText Transfer Protocol. The standardised code used by World Wide Web sites to make their pages and communicate them.

Internet

A global network of computers that contain information on just about anything.

Mb

Megabyte. Hard disk capacities are given in megabytes. Mega represents one million; a byte is a series of seven or eight bits that together represent one character, e.g. a letter or numeral.

Modem

A communications device that modulates and demodulates information enabling communication over the phone lines.

Monitor

An output device that displays text and graphics on a screen. Sometimes called a VDU (Visual Display Unit).

Mouse

A small hand-held device that is moved on a flat surface to control the screen cursor (the pointer or insertion point).

Multimedia

A system that combines two or more or texts, sound and images into a single presentation.

On-line

Immediate access to a host computer at a remote location.

Site

Locations on the Internet.

Software

The programs that enable a computer to do specific tasks.

Touch screen

A monitor that fits onto the main monitor enabling input of information.

World Wide Web

The graphic and interactive part of the Internet.

Learning with computers

While modern computers are easy to use, it takes patience, perseverance, and time to ensure the best use of computer-based learning activities. Hardware is of little use without good software, and good software in itself is not sufficient to guarantee worthwhile learning experiences for children.

The key to gaining maximum benefit from computer-based learning is good teaching. This requires a sound knowledge of the computer's role in learning, familiarity with the technology, and understanding ways computer activities can enrich the learning environment. Sensitivity to the learning needs of young children and good management skills on the part of the teacher are also needed.

Computers don't directly bring about learning; children learn because they want to understand their world. Teachers assist learning by supporting and guiding the process through a range of tools, including computer-based activities.

This book offers an introduction to computers in early childhood settings and a rationale for using computers to enrich learning opportunities. It illustrates activities which enhance developmentally appropriate practice and indicates how to find the right technology—the hardware and software—to suit your teaching needs.

Today's technologies have valuable roles in early childhood programs. They provide new windows to the world of learning, and encourage individuals to think, explore, interact and create. Educators need to ensure that children are equipped to make the most of the technologies now available in the home and classrooms.

Computers and pedagogy

Research has demonstrated the potential of computers to support young children's development and learning. It shows that computer activities provide good opportunities to engage in thinking and problem-solving—the building blocks for future learning. Researchers have also shown that participation in computer activities promotes children's social interaction and the development of early academic skills.

Computer activities provide good opportunities to engage in thinking and problem-solving

Software:
The programs that enable a computer to do specific tasks.

Hardware:
The physical parts of a computer system—keyboard, monitor, mouse, printer and CPU (the computer 'box').

The software allows the teacher to concentrate on interactive processes

Children's interests, imagination and creativity are the starting point for planning computer-supported learning experiences. In most cases children select a computer activity just as they would any other activity—on the basis of its interest to them.

A computer can be a focal point for play and problem-solving, for drawing, writing, and story experiences, for construction and design, and for social exchange. Sometimes, the computer is used to help develop early academic skills such as counting, matching with one-to-one correspondence, or recognising numerals, letters and words.

Clearly, children don't physically manipulate objects when using computers, but computer activities are not intended to replace existing concrete experiences. Further, computers are more than stand-alone tools. We need to view them as one part of an interactive context that includes children, adults and environmental materials.

Scaffolding learning

Intellectual development occurs through interactions and joint problem-solving with more skilled people. In developing children's thinking we must value interaction and give appropriate guidance to solve problems and construct knowledge.

It is now believed that young children's learning is supported or 'scaffolded' using tools and language. Support and guidance enable children to participate in tasks before they're able to complete the same tasks independently. Scaffolding, therefore, is a temporary support.

Scaffolding can be mediated by computers as well as people. Computers provide scaffolds through prestructured content and in-built cognitive supports, e.g., feedback, sequencing, multiple representations of material, and the predictable flow of activity. And because the software provides much of the content and structure of the activity, the teacher or other 'expert' partner is free to concentrate on interactive processes such as encouraging, pointing, questioning, probing and guiding the child.

Getting started

Setting up a computer area is like setting up any other learning area. You need specific objectives and appropriate materials. It must be child-centred and invite both independent and group learning through exploration and investigation.

Criteria for selecting software and planning activities are much the same as for other learning experiences.

A computer active classroom

Setting up a computer area requires thought and planning. To start with you need one or more computers. Computers come in many brands and configurations. Basically, you'll need one with a colour monitor and CD-ROM drive (Compact Disk, Read Only Memory). You also need a printer, preferably one that prints in colour. With this set-up you can make a start on using the many good programs now available to support children's learning.

Computer configurations

A computer has a keyboard, one or more disk drives, a mouse (input devices), and the monitor (output device). Inside the computer is the central processing unit (CPU) and its memories.

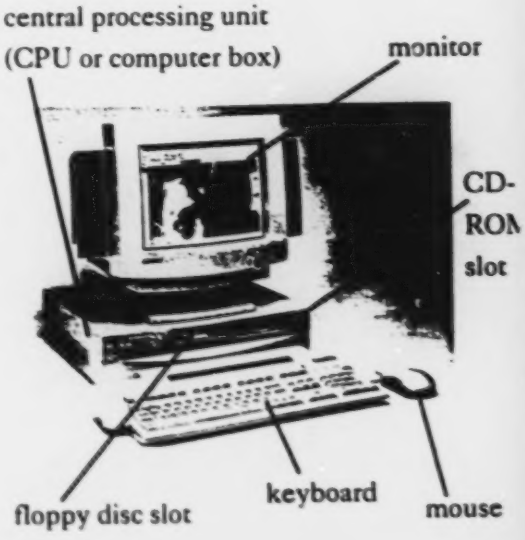
A typical configuration, e.g. 8/800, means that the computer has 8Mb (megabytes) of RAM (Random Access Memory) and an 800Mb internal hard disk (the inbuilt mass storage). RAM is the computer's working memory for running programs.

Disks (floppy or CD-ROM) provide sets of instructions or programs which tell the computer what to do. Disks require special care to protect them from damage. They should not be 'contaminated' by touching their surface, or bent. Store disks in a properly-designed storage container and away from magnetic fields such as telephones and televisions. Even preschoolers can learn about correct disk care.

Setting up

It is important to consider the following questions when setting up a computer area. Does the activity:

- **Meet a specific learning need for the child?**
- **Invite the child's interest and exploration?**
- **Put the child in control of the activity?**
- **Intrinsically motivate the child's interactions?**
- **Lend itself to easy manipulation, but remain challenging?**
- **Encourage the child to transcend the immediate constraints of physical reality and become involved in the process of the activity?**



Shop around for the best deal. Computer hardware is available in specialist computer shops as well as department and electronic stores. Make sure you try before you buy and that you're absolutely certain how to set everything up. Read the manuals—it is time well spent!

Choosing and using software

In deciding which computer-based activities are most appropriate, you need to know what is available. You can then match children's learning needs with learning activities.

Computer-based activities must support contemporary curriculum goals, as well as individuals' learning needs. The key to providing appropriate learning experiences lies jointly in diagnosing learning needs and selecting software. Once you have selected the appropriate software, factors such as teacher's knowledge, attitudes, orientation to curriculum planning, and creativity become crucial in planning worthwhile learning experiences.

Computer-based activities must support contemporary curriculum goals, as well as individuals' learning needs.

As with any activity, make sure you take the necessary steps to ensure all children have equal opportunities to participate in the activities. You can prevent the well-documented situation of boys monopolising the computer by setting up a roster system or agreed method of sharing.

It is not a good idea to use software copied by other teachers or downloaded from the Internet. Firstly, it may involve a breach of copyright regulations, and secondly, you'll find yourself without adequate instructions for using the program.

Site licences are agreements which allow copying of programs for use on a specific educational site at a cost far less than the normal price of individual software items. Check with your software supplier for details.

Thinking about educational software according to categories can be useful. One type of categorisation is according to the type of learning fostered, for example:

- Concept and skill development
- Generic thinking and problem-solving
- Communication.

The screen should be at their eye level and their arms or elbows level with the work height.

Increasingly, software packages aim to support children's learning across more than one area.

The software packages listed in this book are generally suitable for use by preschoolers as well as children in the first years of school. Most software is designed to cater for learning from three to seven years of age and across developmental levels.

Building concepts and skills

The greatest range of early childhood software is designed to support concept and skill development in areas such as:

- early mathematics—especially number-counting; one to one correspondence; recognition of numerals and matching sets of numerals; or early mathematical concepts such as positional terms, directionality, discrimination of size and shape, and ordering;
- reading readiness and beginning reading involving recognition of sounds, letters and words;
- early science, such as animal classifications, habitats and behaviours; and
- art and music such as rhythm, sound and colour differentiation.

Most activities have a game-like format and can be especially useful for children needing extra help to develop foundation concepts and basic skills. Many activities involve selecting and applying rules in given situations. In each task there is usually only one correct answer. The enticing presentation, colourful graphics, animation, sound effects and attention to repetition and sequencing of this type of software is engaging and motivating.

When using concept and skill development programs, children's learning is often best guided by adults. The computer then becomes a focal point for scaffolding learning. Such activities need to be complemented by traditional play experiences and concrete materials.

Ergonomics

While young children don't usually spend long periods of time at the keyboard they must have an ergonomically sound work environment. Adequate back support is important and children shouldn't have to strain their necks to see the screen. The screen should be at their eye level and their arms or elbows level with the work height. Feet should be flat on the floor or supported by a foot rest.

Position the computer to avoid glare and reflections on the screen. There are screens available which some people believe help reduce reflection.

Get a computer workstation that allows the monitor to be placed at children's eye level, the keyboard at elbow level, and keeps cords and power boards out of sight. It also needs to provide a spot for the printer and for storage of paper, disks and other support materials.

Encourage children's good sitting posture while using the keyboard.

Deciding what to buy

- Which computer? Become familiar with the sorts of educational applications useful in your setting, then identify a computer system which does what you want.
- CD-ROM drive? Many of the best early childhood programs are available on CD-ROM (Compact Disk, Read Only Memory). CD-ROMs store graphics, text, sound and video images. information is accessed via an external or internal CD-ROM drive.
- Check what software the computer comes with, both productivity (e.g. word processors) and educational.
- Consider which sorts of software and hardware other early childhood educators use. Talk to users about their experiences. Visit computer shops, department stores and exhibitions. Attend seminars and in-services. Read books and reviews.
- Be realistic about how much you can afford to spend.
- You need software and blank disks, and consumables such as paper and ink cartridges. As well you must consider maintenance and servicing when the warranty expires.
- Join with others to make a group purchase of equipment (hardware and software). Group efforts mean you can pool expertise, experiences and resources.
- Other requirements are: extension leads, power boards, disks, disk boxes, carry bags, security attachments, and a cover for the computer.
- You will need a table or stand for the computer (possibly on wheels) and seating. The number of available chairs tends to govern how many children can work in the area at one time.
- Establish a secure overnight storage place and/or security fastenings.
- If you want to gain access to the Internet and World Wide Web, you need a modem, associated software and an Internet Service Provider (ISP).
- Virus software helps protect your computer from 'viruses'— computer 'bugs' that can destroy files and even entire networks. Don't let children bring in programs from home because they may contain viruses.

Selecting software

- Major software and educational publishers produce catalogues of available computer programs. Read these carefully and identify appropriate software.
- Try before you buy. Take time to become familiar with the content of the program.
- Ensure that the learning objectives and content complement your teaching goals. For example, does the software take into account that children are active learners?
- Establish when you would use this software.
- Ascertain that the teaching/learning style of the activity is consistent with sound developmental and educational principles.
- Ensure the program can be easily used by children. Does it require good reading ability? Does it require a printer?
- Check that teacher instructions are clear and that support materials are available. Think about complementary materials and activities you might have to provide.
- Check that the program contains activities of varying degrees of difficulty for children of different abilities.
- Determine how much time children must spend using the program to achieve the objectives.
- Identify the apparent strengths and any obvious weaknesses of the activity. Some of these may not be readily apparent until children begin to work with the activity.
- Be clear about the 'platform' requirements, that is, make sure the software is designed for your brand, model and configuration of computer.
- When children have participated in the activity jot down information on their responses. For example:
  - How did they respond to the activity?
  - Did the activity encourage social interaction?
  - Did you observe any specific behaviours indicating that learning took place?
  - Any problems?
  - Hints for classroom management.
  - General comments/concerns.
- Keep a portfolio of children's computer work.

Thinking and problem-solving

Computer activities designed to facilitate thinking and problem-solving skills span a range of traditional curriculum areas or may be 'content free'.

Open-ended problem solving activities encourage children to use divergent thinking skills by solving problems which have a number of possible answers. The child's task is to invent solutions and discover which ones are most appropriate for the specific situation.

Some computer activities focusing on open-ended exploratory learning come in the form of educational adventure games. Other activities, such as Logo and Kid Pix, are not game-like.

Logo

According to Seymour Papert (1980), author of *Mindstorms: Children, Computers and Powerful Ideas*, when children feel in control of the computer they begin to explore the process of problem-solving.

A classic problem-solving environment is Logo. Logo is a programing language and can get quite complex, but the feature most commonly used with young children is 'turtle graphics'. This involves 'programming' an icon—usually a turtle—to create geometric designs, patterns and drawings. The Logo commands are also used to control a 'floor turtle'— a robot on wheels. The robot is operated by typing simple instructions on the keyboard.

By the end of the first years of school period, children requiring new intellectual challenges can make constructions using special Lego, Fischer, or Technik materials, and program and control them using their Logo skills and relevant software.

By putting children in control of problem-solving, Logo helps the development of language, spatial awareness, social and cooperative behaviour. It also helps to develop early mathematical concepts, fine motor skills, and specific problem-solving strategies such as formulating, testing and modifying hypotheses.

By putting children in control of problem-solving, Logo helps the development of language, spatial awareness, social and cooperative behaviour.

LogoWriter Primary (LCSI) was designed for use with children learning to read. It comes with activity cards and a comprehensive teacher's guide.

Kinder Logo (Terrapin Software) enables young children to explore Logo. It can be used by children who have no reading skills. Must be used in conjunction with a classic Logo program.

Challenges for gifted children:

Building and controlling robots using Logo.

Educational adventure games

Educational adventure games grew out of 'computer simulations' which, in turn, grew out of the traditional simulations—role plays and board games—which have been around for a long time. Computer simulations are environments that model reality, especially realities which are not accessible in a classroom, such as outer space or volcanoes. For example, the popular Sim simulations (SimCity 2000, Sim Isle, Sim Town, Sim Tower) put older students in charge of managing real world environmental issues.

For younger children, simulations must be related to imaginary or immediate environments and should encourage interaction with people and things. It is generally not appropriate to provide children with vicarious experiences when they operate best with concrete materials and real life experiences.

For example, why simulate a fire station when you can visit a real one? Where there are limited opportunities for real life experiences, however, simulations can provide valuable learning experiences.

Adventure games involve exploring fantasy or imaginary worlds and tackling a series of problems within the imaginary environment. They present highly motivating interactive situations for working out solutions to problems. Players often assume the role of characters and must achieve pre-specified goals within the imaginary world.

Adventure games are usually played in small groups and are useful for developing social skills (cooperation and shared decision-making), and cognitive skills (planning, monitoring and evaluating). The children rely heavily on the sophisticated sound, video, and graphic capabilities of the computers which they find especially engaging.

Classic adventure games

Granny's Garden (Dataworks)

Flowers of Crystal (Dataworks)

Dinosaur Discovery (Jacaranda)

Other adventure games

Little Red Riding Hood (Dataworks)

The Three Little Pigs (Dataworks)

More challenging activities

Wizard's Revenge (Sherston Software)

Dragon World (Dataworks)

Jack and the Beanstalk (Dataworks)

My Lost Dog (Koala Software)

Make your own adventure game

My Make Believe Castle (LCSI) and My Make Believe Treasure Isle lets children make their own simple animated 'learning worlds' and control characters and their actions. Children can record and assign their own voices to characters.

Communication

Early childhood contexts aim to promote children's talking, listening, drawing, reading and writing. While there aren't any computer programs which will magically teach children to read or write many enhance children's communication skills.

Cross-curricula software

Busytown (Paramount Interactive) presents an interactive 'world' where characters come to life in 12 different 'playgrounds'. Children can explore, create and play while developing maths, reading, and problem-solving skills.

Allie's Playhouse (Opcode Interactive). An interactive playworld that encourages children to explore and create through counting, playing and recording music, discovering planets, countries, and animals, telling the time, singing nursery rhymes, and constructing and playing a musical instrument.

Zurk's Learning Safari (Soleil). This package introduces a range of science, maths and language concepts in a wildlife context. CD and disk versions available.

The Playroom, The Treehouse and **The Backyard** (Broderbund). These help children explore concepts of time, space, direction, as well as a range of pre-reading and maths skills.

Maths and science software

Kid's Zoo* (Knowledge Adventure) introduces children to the world of animals, including habitats, attributes, life spans and families. It provides a series of learning games, animal names, appearances, and sounds, and an interactive encyclopedia. All information is read aloud.

Four Footed Friends (ZoomBooks)

Playtime in the Park* (Firmware)

Rodney's Wonder Window* (Voyager)

Maths Rabbit (The Learning Company) Deluxe version requires CD-ROM.

Millie's Math House (Edmark)

Sammy's Science House (Edmark)

Trudy's Time and Place House* (Edmark)

A Silly Noisy House* (Voyager)

Thinkin' Things and Thinkin' Things 2 (Edmark) Disk and CD.

Reading and language software

A to ZAP* (Sunburst) provides engaging contexts to help pre readers experiences sounds patterns and words.

1-2-3 Sequence Me (Sunburst) helps with sequencing ideas.

Podd (Sunburst) helps develop familiarity with action words.

Tiger's Tales* (Sunburst) uses interactive adventure stories to help young learners experience text.

DaisyQuest (Great Wave Software)

Reader Rabbit 1, 2 & 3 Deluxe versions require CD-ROM (The Learning Company).

Franklin's Reading World* (Scholastic)

Word Tales* (Voyager)

Albert's House (DataWorks)

Bailey's Book House (Edmark)

*Requires a CD-ROM drive

Painting and drawing

When children use drawing or 'painting' programs they express their ideas, feelings and emotions and explore properties of colour, shape, form, line and size in much the same way as they would using paint and crayons. They are also working with a medium that is increasingly revolutionising the world of art and design.

Most drawing programs allow children to add letters and words to their illustrations. As they become confident with writing they will want to type their own names, words and stories. Pictures, designs and text can be printed.

Writing and reading

In the early development of writing, where motor skills lag behind cognitive development, computer-based activities can be very helpful. Children can use the computer for drawing and then gradually add text to describe their ideas. As they become more interested their texts become more elaborate.

Word processing programs provide a means for children of shifting from the mechanics of writing and rewriting to the process of text creation and editing, as performed in the real world. Word processing helps children focus on fluent composition.

Word processors also help provide children with the satisfaction of being able to edit without spoiling the appearance of their work. They can then share their work with other children; work that is attractive and easy to read. And with a modem children can become worldwide publishers.

Electronic and interactive story books

Electronic story books are books with characters and pictures that 'come to life' through animation, sound and music. Interactive story books have the added dimension of putting children in partial control of the characters and the story.

Programs are simple to use and children just point and click. They can skip ahead, go back or replay a favourite part. The computer reads (and spells as required) text, and words and sentences can be isolated.

Electronic story books*

Arthur's Birthday

Ruff's Bone

Just Grandma and Me

Arthur's Teacher Trouble

The Tortoise and the Hare

The New Kid on the Block (all from Broderbund)

Peter and the Wolf

Beauty and the Beast

Adventures of Pinocchio

Sleeping Beauty (Compton's New Media)

BabaYaga and the Magic Geese

Imo and the King

The Little Samurai (Davidson)

Amanda Stories (Voyager) are interactive stories without words that children can tell each other and themselves.

Imagination Express (Edmark) lets children make their own interactive story books.

*Electronic and interactive story books require a CD-ROM drive and new titles appear regularly.

Multilingual versions of books are usually available.

Painting and drawing programs

Dazzle Draw (Broderbund), **Mousepaint** and **MacPaint** (Claris), **Ollie Octopus' Sketchpad** (Storm Software), **Touch Window** (Personal Touch), and **MicroIllustrator** (Ashton).

The **KidPix** (Broderbund) programs provide engaging and challenging creative contexts for children of all ages and stages. **KidPix 2** enables children to draw and paint and combine other effects to create impressive productions.

Kid Pix Studio* is a multimedia paint and animation program that can integrate animation, video, sound, graphics, photos and music.

Amazing Animation* (Claris) allows children to create pictures and cartoons with characters, sounds and sets.

Kids at Work (ITDA) allows children to build city and country scenes by manipulating shapes. These scenes can be saved and printed.

More challenging programs

KidCAD (Davidson) is an electronic 3D (three dimensional) design and building kit to create and decorate houses and other structures. (CAD stands for computer-assisted design)

Classic programs

Mask Parade (Springboard) enables children to make masks by putting together various parts of faces on the screen and then printing out a whole face. This is then cut out and coloured to make a mask.

Print Shop Deluxe (Broderbund) was one of the first educationally-oriented drawing and design programs. It helps children combine graphics and text to produce cards, posters, stationary, signs, calendars and banners. Many add-on graphics are available.

Word processing, story creation programs and language programs

Popular word processing programs include, **Magic Slate** (Sunburst), **Bank Street Writer** (Scholastic), **I Can Write** (Sunburst) **Kidwriter** (Spinnaker), and **Early Word.**
Some word processors produce Japanese and Chinese characters.

Kid Works 2 * (Davidson) combines a word processor, paint program, and advanced text-to-speech technology. It enables conversion of text to pictures and pictures to text. Children can hear their own stories and help is provided through a 'Talking Help' mode.

The Amazing Writing Machine (Broderbund) lets children create stories and other texts and illustrate them. It has a Bright Ideas Tool Box with lots of writing hints and a large collection of writing templates. (Disk and CD). Better for maturing writers.

Story Book Weaver (MECC) lets children construct stories using ideas, worlds, pictures and sounds.

StoryBook Theatre (Sunburst) Children can create their own animated stories—including big books and mini books.

Easy Book (Sunburst) lets children make books with text and illustrations.

WiggleWorks* (Scholastic) is an integrated program that provides reading, writing, listening and language activities.

The **Kidstory** and **KidsTheatre*** series (Roadshow) contain interactive story books and a range of other reading and memory activities.

*Requires a CD-ROM drive

Keyboard skills

Young children's computer activities generally require low level keyboard skills. It is not necessary for them to touch type. Usually, program operation is a one- or two-finger affair.

However, given their lifetime involvement with computers, it is never too soon to become familiar with the layout of the keyboard. A range of popular activities can be adapted for this purpose. This is not to suggest that children must use the keyboard correctly before they use the computer. The way to learn is by 'doing'. The following ideas can be used in conjunction with purposeful computer-based activities.

Developing keyboard skills

- Collage/construction—make a keyboard
- Keyboard hopscotch and other floor games
- Keyboard jigsaws
- Keyboard bingo and similar board games
- Fingernail stickers and puppets (to identify keys)
- Useful keyboard familiarity programs include **Kids on Keys** (Spinnaker) and **Kid Keys** (Davidson)

What is the Internet?

Any text on computers and learning must mention the Internet and its role in learning. The potential of the Internet to make children international explorers, communicators and publishers makes it a compelling educational tool.

The Internet is a global collection of thousands of interconnected computer networks that communicate with each other. It is for sharing research, communications, entertainment, education, and advertising. E-mail enables text message to be sent to one or more people. Both teachers and children can use it to communicate with people around the world.

The World Wide Web (known as 'the Web'), is the graphic and interactive part of the Internet. It contains millions of documents, consisting of text, graphics, audio and video, in thousands of Web 'sites'. The gateway to a Web site is a Home Page. Web sites usually contain specialised information and can enable links to related information all over the Web.

It's estimated that there are some 60 million people who use the Internet. It can be used to contact people, shop, find information about almost anything, make plane bookings, or simply check weather conditions in Timbuktu.

World Wide Web sites are accessed through a Web browser such as NetScape or Mosaic and can be tracked down using their URL (Uniform Resource Locater). Web 'addresses' need to be typed accurately as each set of letters has a specific meaning.

Computer-based activities in the early childhood classroom are intended to support an already rich and stimulating environment. Ideally, they should complement exploration of real world and concrete learning experiences. Sometimes they will be used when one to one adult/child interaction is not possible. It is certainly not intended that computer-based activities replace traditional experiences with people, concrete materials, books or other classroom resources.

Accessing the Internet

To travel this international superhighway you need an access ramp. This comes in the form of a modem linking your computer to the phone line, relevant software and an Internet Service Provider (ISP).

For example:

http://www.uws.edu.au/educate/earlychild

i.e: http://www	*HyperText Transfer Protocol World Wide Web*
.uws.	*The domain name for the address*
edu.	*Indicates this is an educational site*
au	*Country (nothing if USA)*
educate	*Indicates section e.g. faculty*
early child	*Indicates subsection e.g. department*

Where to go

Australian Council of Computers in Education (ACCE)
PO Box 1255
BELCONNEN ACT 2616
Contact the ACCE through (g.butler@uow.edu.au) for your State's *Computers in Education* group. Local groups provide a wealth of information about practical uses of computers in education and run conferences around the country.

Useful books

Faturous, C., Downes, T. & Blackwell, S. (1994) *In Control: Young Children Learning with Computers.* Blackheath, NSW: Social Science Press. ISBN 0 949218 21 9.

Dublin, P. (1994) *Integrating Computers in Your Classroom. Early Childhood.* NY: Intentional Educations. ISBN 0 06 501894 X.

Frazier, D. (1995) *Internet for Kids.* NY: Sybex. ISBN 0 7821 1741 4

Male, M. (1994) *Technology for Inclusion: Meeting the Special Education Needs of all Students.* Boston: Allyn and Bacon. ISBN 0 205 14695 3

Papert, S. (1993) *The Children's Machine: Rethinking School in the Age of the Computer.* NY: Basic Books. ISBN 0 465 01063 6.

Ray, J. & Warden, K. (1995) *Technology, Computers and the Special Needs Learner.* NY: Delmar. ISBN 0 8273 6476 8.

Some major educational software distributors

Edsoft
PO Box 314
BLACKBURN VIC 3130
Tel: 1 800 338 873
Fax: 1 800 674 899

New Horizons
PO Box 658
ARMIDALE NSW 2350
Tel: 067 711 055 or 1 800 023 069
Fax: 1 800 808 656

Scholastic Australia
PO Box 579
GOSFORD NSW 2250
Tel: 043 283 555

DataFlow
15 Merton Street
ZETLAND NSW 2017
Tel: 02 310 2020 or 1800 656 875
Fax: 02 319 2676

Some distributors will send software to you 'on approval' to 'try before you buy'.

Professional journals about educational technology policy and practice

Australian Educational Computing (ACCE)

Information Transfer (NSW Computer and Education Group)

Quick (Queensland Society for Information Technology in Education)

Learning and Leading with Technology

Journal of Computing in Childhood Education

Journal of Research on Computing in Education

Educational Technology

Education and Computing

British Journal of Educational Technology

These contain some articles

Classroom (Ashton-Scholastic)

Every Child (AECA)

Australian Journal of Early Childhood (AECA)

Young Children (NAEYC)

Child Care Information Exchange

Journey Inside the Computer is an excellent resource for teachers wanting to know more about the science behind computing. This 300-page guide, plus video (US system) and sample microprocessor chips is available free to teachers from Intel in the United States. Tel: 0011 1 541 302 3776.

Guidelines for Contributors

If you are interested in writing for the AECA Resource Book Series or any other AECA publication, please contact the Publications Section of AECA for further information on the preparation of manuscripts and for a copy of the Guidelines for Contributors.

Publication Section
Australian Early Childhood Association
PO Box 105, Watson ACT 2602
Tel: (06) 241 6900 Fax: (06) 241 5547

Other Subscription Publications 1996

Every Child Magazine

Every Child magazine is published four times a year especially for early childhood educators, carers and parents of children from 0–8 years of age. It provides news and features of interest to everyone working with, and interested in, the education, care and development of young children.

$35
Overseas Aust. $40
includes postage

Australian Journal of Early Childhood

This journal comes out four times per year. It features up to date articles designed to impart new information and encourage the critical exchange of ideas among practitioners in the early childhood field. AJEC gives the field an indispensable Australian perspective on issues of concern and interest.

$40
Overseas Aust. $45
includes postage

Australian Early Childhood Newsletter

There will be six issues of the newsletter in 1996. The newsletter is produced by National Office staff and is a way of keeping the field informed of developments and issues as they occur. Over recent years particular attention has been paid to political events and government policy changes. With so much happening it is likely that 1996 issues will continue this focus.

$20
Overseas Aust. $23
includes postage

Bulk Rates are available to organisations ordering more than 20 copies of any one item. Contact AECA for details.

For subscription inquiries contact:
AECA Subscriptions
PO Box 105, Watson ACT 2602, Australia
Tel: (06) 241 6900 Fax: (06) 241 5547

About AECA

The Australian Early Childhood Association Inc. (AECA) is a leading specialist publisher of early childhood literature. It actively promotes the provision of high quality services for all young children from 0–8 and their families, and supports the important role of parents. AECA is also the national umbrella organisation for Children's Services.

As well as producing the *Australian Journal of Early Childhood*, *Every Child* magazine, the *AECA Resource Book Series*, a newsletter and special titles, AECA markets books and videos on early childhood topics from other companies and organisations.

For further information please telephone (06) 241 6900.

Other AECA publications include

Australian Journal of Early Childhood

Various special titles

***Every Child* magazine**

1996 topics include

- **Managing children's behaviour**
- **Speech and language**
- **Technology in early childhood**
- **Changes in family law**
- **Gifted education**
- **Transitions**
- **Quality assurance in schools**
- **Maths 0–8**
- **Changing roles of parents**
- **Men in early childhood**

Other Resource Book

Write from the Start

Understanding Separation & Divorce

Understanding Grief & Loss

The Power of Mum

Beating Burnout

Promoting Self-esteem

Growing Readers

Conflict Resolution

Health and Safety

Why Won't My Torch Work?

Our Code of Ethics at Work

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